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EXAMINER

AUGHENBAUGH, WALTER

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,601

Applicant(s)

KRECH ET AL.

Examiner

Walter B Aughenbaugh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30,32-37,46-53 and 55-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30,32-37,46-53 and 55-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/30/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Acknowledgement of Applicant's Amendments

1. The amendments made in claims 30, 32-37, 46-53 and 55-61 in the Amendment filed April 16, 2004 (Amdt. D) have been received and considered by Examiner.
2. The cancellation of claims 31 and 54 in Amdt. D has been acknowledged by Examiner.

WITHDRAWN OBJECTIONS

3. The objection to claim 32 made of record in paragraph 10 of Paper 16 and the objection to claims 48, 53 and 56 made of record in paragraph 11 of Paper 16 have been withdrawn due to Applicant's amendments in claims 32, 48, 53 and 56 in Amdt. D.

WITHDRAWN REJECTIONS

Claim Rejections - 35 USC § 112

4. The 35 U.S.C. 112 rejection of claims 30, 49 and 50 made of record in paragraph 12 of Paper 16 has been withdrawn due to Applicant's amendments in claims 30 and 49 in Amdt. D.

Claim Rejections - 35 USC § 102

5. The 35 U.S.C. 102 rejection of claims 30-32 that was repeated in paragraph 6 of Paper 16 has been withdrawn due to Applicant's amendments in claim 30 in Amdt. D.
6. The 35 U.S.C. 102 rejections of claims 30, 32, 34-37, 47, 49-53 and 55-61 made of record in paragraphs 13 and 14 of Paper 16 have been withdrawn due to Applicant's amendments in claim 30 in Amdt. D.
7. The 35 U.S.C. 102 rejections of claim 54 made of record in paragraphs 13 and 14 of Paper 16 have been withdrawn due to Applicant's cancellation of claim 54 in Amdt. D.

Claim Rejections - 35 USC § 103

8. The 35 U.S.C. 103 rejections of claims 34-36 that were repeated in paragraphs 7-9 of Paper 16 have been withdrawn due to Applicant's amendments in claim 30 in Amdt. D.
9. The 35 U.S.C. 103 rejection of claim 31 made of record in paragraph 15 of Paper 16 has been withdrawn due to Applicant's cancellation of claim 31 in Amdt. D.
10. The 35 U.S.C. 103 rejections of claims 33, 46, 48 and 55-61 made of record in paragraphs 16-23 of Paper 16 have been withdrawn due to Applicant's amendments in claim 30 in Amdt. D.

NEW REJECTIONS

Claim Rejections - 35 USC § 103

11. Claims 30, 32, 34-37, 47, 49-53, 55 and 57-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al.

In regard to claim 30, Oishi et al. teach a plastic article (i.e. a part or component of transportation equipment or a container, col. 69, lines 1-3) comprising a composition comprising a blend of a polyolefin resin and a thermosetting resin (col. 29, lines 3-6 and 13-14) and a diguanamine flame retardant that is a non-halogenated flame retardant where all of the resins are free of halogen (col. 19, lines 1-5 and 10-11) and where all of the flame retardant(s) (i.e. the diguanamine flame retardant) are selected only from the group consisting of non-halogenated flame retardants as claimed.

Oishi et al. fail to explicitly teach that the plastic article (i.e. the part or component of transportation equipment or container) is a pallet.

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Endo et al., however, teach a resin composition comprising a flame retardant (col. 37, lines 61-64) that is formed into a container or a pallet (col. 7, lines 38-39). Therefore, since a pallet is both a part or component of transportation equipment and a container (Applicant characterizes a pallet as a container at line 14 of page 1 of Applicant's specification), one of ordinary skill in the art would have recognized to have formed the part or component of transportation equipment or container of Oishi et al. in the form of a pallet since it is notoriously well known to form flame retardant containing plastic pallets as taught by Endo et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the part or component of transportation equipment or container of Oishi et al. in the form of a pallet since it is notoriously well known to form flame retardant containing plastic pallets as taught by Endo et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the container of Oishi et al. in the form of a pallet since it is notoriously well known to form flame retardant containing plastic pallets as taught by Endo et al.

In regard to claim 32, Oishi et al. teach that the thermosetting resin is an epoxy resin that is an epoxy resin as claimed (col. 29, lines 56-57 and 61-62). In regard to claim 34, Oishi et al. teach that the container comprises glass beads as a filler (col. 32, lines 51-52 and col. 32, line 67-col. 33, line 2). In regard to claim 35, Oishi et al. teach that the diguanamines taught by Oishi et al. have excellent antifouling property (col. 3, lines 43-45); therefore, the diguanamines taught by Oishi et al. are antifouling agents, and therefore antimicrobial additives, as antifouling agents are characterized as antimicrobial additives in claim 61. In regard to claim 36, Oishi et al. teach that the flame retardant is a compound containing phosphorus-nitrogen bonds, since Oishi et al.

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teach that phosphorus-containing acids neutralized with bases such as ammonia or an amine, or ammonium polyphosphates, used in combination with diguanamine synergistically improves the flame-retarding results of the composition (col. 23, lines 37-43 and col. 24, lines 2-12 and 23); phosphorus-containing acids neutralized with bases such as ammonia or an amine, or ammonium polyphosphates contain phosphorus-nitrogen bonds. In regard to claim 37, Oishi et al. teach that the flame retardant is present in a range of 3-50 wt.% (col. 23, lines 28-30), a range that overlaps with the claimed range of "more than zero and up to and including 25 parts by weight".

In regard to claim 47, Oishi et al. teach that the container comprises a filler (col. 32, lines 51-52 and 67).

In regard to claims 49 and 50, Oishi et al. teach that the polyolefin resin is a fully prepolymerized uncrosslinked hydrocarbon polyolefin (homopolymeric in regard to claim 50) resin (e.g. styrene, polyethylene, polypropylene, polybutylene, poly-3-methylbutene, col. 29, lines 7-9 and 13-15), and the thermosetting resin of Oishi et al. is necessarily curable since it is a thermosetting resin. Oishi et al. fail to explicitly teach the claimed relative amounts by weight of the polyolefin and thermosetting resins, but since Oishi et al. teach that the polyolefin resin and the thermosetting resin are blended (col. 29, lines 3-6), it would have been obvious to one of ordinary skill in the art at the time the invention was made to have varied the relative amounts of the polyolefin and thermosetting resins in the blend depending on the particular desired end result, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art in the absence of unexpected results. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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In regard to claim 51, Oishi et al. teach that the filler is incorporated as needed to an extent (i.e. in an amount) that does not impair the advantageous effects of the invention (col. 32, lines 51-54), an amount that overlaps with the claimed range of "more than 0 to 70 parts by weight". In regard to claims 52 and 53, Oishi et al. teach that the thermosetting resin is an epoxy resin (col. 29, lines 56-57 and 61-62). In regard to claim 55, Oishi et al. teach that the composition comprises a curing accelerator (a thermal curing agent as claimed, col. 14, lines 63-66). In regard to claim 57, Oishi et al. teach that the thermal curing agent is an imidazole (col. 14, lines 64-65). In regard to claim 58, Oishi et al. teach that the composition is cured (col. 14, line 62-col. 15, line 2). In regard to claim 59, Applicant defines the term "semi-interpenetrating polymer network" as "polymer networks of two or more polymers wherein at least one polymer is crosslinked and at least one polymer is uncrosslinked" at the top of page 6 of the specification; the blend of a polyolefin resin and a thermosetting resin taught by Oishi et al. is a semi-interpenetrating polymer network since the polyolefin resin is uncrosslinked and the thermosetting resin, by definition, is crosslinked.

In regard to claim 60, Oishi et al. teach that the antimicrobial additive (the diguanamine) is integrally associated with the container since it is a component of the composition of the material that the container is formed from and that the diguanamine is substantially insoluble in water when the n value of the ammonium polyphosphate taught by Oishi et al. is a substantially large value (col. 24, line 16-20). In regard to claim 61, Oishi et al. teach that the antimicrobial additive (the diguanamine) is an antifouling agent (col. 3, lines 43-45).

12. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and in further view of Perez et al. and in further view of Angell, Jr.

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Oishi et al. and Endo et al. teach the pallet as discussed above. Oishi et al. and Endo et al. fail to explicitly teach that the pallet comprises structural foam comprising an integral skin and a cellular core. Perez et al., however, disclose a polymer network that is applied to a storage vessel (col. 3, lines 24-25) comprising a thermally cured epoxy resin and a fully prepolymerized hydrocarbon polyolefin (col. 3, lines 8-12). Perez et al. disclose that the composition is a foam (any foam would be considered to be "structural") (col. 23, lines 58-59). Furthermore, Angell, Jr. discloses a container formed of a foamable polymeric material having a wall having a dense surface zone (also referred to by Angell, Jr. as a shell) and a cellular interior that has a greater flexural strength and stiffness than a wall of the same thickness that is uniformly solid (col. 2, lines 8-22 and 42-71). The shell disclosed by Angell, Jr. is structurally equivalent to the integral skin as claimed by Applicant. Therefore, one of ordinary skill in the art would have recognized to have used the polymeric foam composition of Perez et al. that comprises a thermally cured epoxy resin and a fully prepolymerized hydrocarbon polyolefin as a component of the pallet of Oishi et al. and Endo et al. since the polymeric foam composition of Perez et al. is applied to a storage vessel as taught by Perez et al. and to have formed the pallet such that the foam comprises an integral skin and a cellular core in order to maximize the flexural strength and stiffness of the pallet as taught by Angell, Jr.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polymeric foam composition of Perez et al. that comprises a thermally cured epoxy resin and a fully prepolymerized hydrocarbon polyolefin as a component of the pallet of Oishi et al. and Endo et al. since the polymeric foam composition of Perez et al. is applied to a storage vessel as taught by Perez et al. and to have formed the pallet such that the

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foam comprises an integral skin and a cellular core in order to maximize the flexural strength and stiffness of the pallet as taught by Angell, Jr.

13. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and in further view of Radican.

Oishi et al. and Endo et al. teach the pallet as discussed above. Oishi et al. and Endo et al. fail to teach that the pallet further comprises at least one radio frequency identification (RFID) tag. Radican, however, teaches the use of RFID tags to enable the rapid acquisition and updating of container location and status (col. 13, lines 19-22). Therefore, one of ordinary skill in the art would have recognized to have provided RFID tags to the pallet of Oishi et al. and Endo et al. in order to enable the rapid acquisition and updating of container location and status as taught by Radican.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided RFID tags to the pallet of Oishi et al. and Endo et al. in order to enable the rapid acquisition and updating of container location and status as taught by Radican.

14. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and in further view of Juhanson.

Oishi et al. and Endo et al. teach the pallet as discussed above. Oishi et al. and Endo et al. fail to teach that the pallet further comprises a friction material on at least one surface of the pallet. Juhanson, however, disclose a container having a high friction pad attached to the bottom of the container to provide a non-skid surface to the bottom of the container (col. 2, lines 39-45). Therefore, one of ordinary skill in the art would have recognized to have attached the high

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friction pad of Juhanson to the bottom of the pallet of Oishi et al. and Endo et al. in order to provide a non-skid surface to the bottom of the container (i.e. pallet) as taught by Juhanson.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have attached the high friction pad of Juhanson to the bottom of the pallet of Oishi et al. and Endo et al. in order to provide a non-skid surface to the bottom of the container (i.e. pallet) as taught by Juhanson.

15. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and in further view of Perez et al.

Oishi et al. and Endo et al. teach the pallet as discussed above. Oishi et al. and Endo et al. fail to teach that the composition further comprises a photoactivatable catalyst selected from the group consisting of an onium salt photoinitiator and a cationic organometallic complex salt. Perez et al., however, disclose a polymer network that is applied to a storage vessel (col. 3, lines 24-25) comprising a thermally cured epoxy resin and a fully prepolymerized hydrocarbon polyolefin (col. 3, lines 8-12). Perez et al. disclose that the epoxy resin is cured by a photoactivatable cationic catalyst (col. 3, lines 13-17 and col. 23, lines 40-42). Perez et al. teach that the photoactivatable cationic catalyst is an onium salt photoinitiator or a cationic organometallic complex salt (col. 23, lines 43-47). Therefore, one of ordinary skill in the art would have recognized to have used the onium salt photoinitiator or a cationic organometallic complex salt of Perez et al. as the curing agent of the epoxy resin of the pallet of Oishi et al. and Endo et al. since an onium salt photoinitiator and a cationic organometallic complex salt are notoriously well known curing agents for epoxy resin as taught by Perez et al.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have recognized to have used the onium salt photoinitiator or a cationic organometallic complex salt of Perez et al. as the curing agent of the epoxy resin of the pallet of Oishi et al. and Endo et al. since an onium salt photoinitiator and a cationic organometallic complex salt are notoriously well known curing agents for epoxy resin as taught by Perez et al.

ANSWERS TO APPLICANT'S ARGUMENTS

16. Applicant's arguments regarding Oishi et al. presented on pages 10-11 of Amdt. D have been fully considered but are not persuasive. Applicant argues that since the "rejection alleges the composition of Invention 2 has the use of Invention 3", the rejection (under 35 U.S.C. 102) made of record in paragraph 13 of Paper 16 is not proper. However, since the flame retardant of "Invention 2" is a diguanamine (col. 19, lines 1-5) as stated in paragraph 13 of Paper 16, and since the container of "Invention 3" is formed from a resin comprising diguanamine (col. 68, line 52-col. 69, line 5), there is sufficient overlap between "Invention 2" and "Invention 3" to apply the teachings pertaining to one of these "Invention[s]" to the other "Invention". Applicant argues that it is unclear to what the "blends" teaching at col. 29, line 4 refers, but it is clear that it refers to the phrase "such resins and/or rubbers" at line 6 of col. 29, which in turn refers to the phrase "synthetic resins and oils, for example, thermoplastic resins, thermosetting resins and rubbers" at lines 2-4 of col. 29. Examples of resins characterized in the "synthetic resins and oils, for example, thermoplastic resins, thermosetting resins and rubbers" category are then provided in col. 29. Applicant states that "silence in a reference is not a teaching", but there is no "silence" in this particular teaching. Applicant refers to col. 35 as where the blends are identified, but the composition of the blend is taught is col. 29; the examples in col. 35 (and anywhere else in the

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patent) to which Applicant refers are merely examples and do not define the scope of the invention. The teachings in col. 29 define the scope of the invention. Blends of a polyolefin resin and a thermosetting resin are taught in col. 29.

17. Applicant's arguments presented on pages 12-13 of Amdt. D regarding the proposed combination of Oishi et al. and Endo et al. have been fully considered but are not persuasive. Applicant argues that "halogentated epoxies are disclosed as useful flame retardants" in Endo et al., but the Office Action does not rely on Endo et al. for its teaching of a particular class of flame retardant (such as non-halogenated), but for its teaching of a pallet comprising a flame retardant. The Office Action proposes forming the composition taught by Oishi et al. in the form of a pallet, not forming the composition taught by Endo et al. in the shape of a pallet. One of ordinary skill in the art would have been motivated to consult Endo et al. for guidance on how to modify the part or component of transportation equipment or container comprising a flame retardant taught by Oishi et al. since the pallet that Endo et al. discloses is a part or component of transportation equipment and a container (Applicant characterizes a pallet as a container at line 14 of page 1 of Applicant's specification), and the pallet of Endo et al. comprises a flame retardant.

18. Applicant's arguments presented on pages 13-14 of Amdt. D regarding the proposed combination of Oishi et al., Perez et al. and Angell, Jr. have been fully considered but are not persuasive. Applicant takes issue with the statement in paragraph 17 of Paper 16 that "any foam would be considered to be "structural"". Applicant insists that the term "structural" necessarily implies that whatever is referred to as "structural" is "weight-bearing". It is Examiner's position that this is not the case; any foam is be a "structural foam" because a foam is a foam because all

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foams have a certain characteristic structural feature (i.e. pores). The term "structural" does not in and of itself recite "weight-bearing".

19. Applicant's arguments presented on pages 15-16 of Amdt. D regarding the proposed combination of Oishi et al. and Radcan have been fully considered but are not persuasive.

Applicant argues that there is no motivation to combine the references, but one of ordinary skill in the art would have recognized that it would be desirable to provide the part or component of transportation equipment or container taught by Oishi et al. with the RFID tag taught by Radcan for the reason articulated in the rejection.

20. Applicant's arguments presented on page 17 of Amdt. D regarding the proposed combination of Oishi et al. and Juhanson have been fully considered but are not persuasive.

Applicant argues that there is no motivation to combine the references, but one of ordinary skill in the art would have recognized that it would be desirable to provide the part or component of transportation equipment or container taught by Oishi et al. with the high friction pad of Juhanson for the reason articulated in the rejection.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. The examiner can normally be reached on Monday-Thursday from 9:00am to 6:00pm and on alternate Fridays from 9:00am to 5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Walter B. Aughenbaugh

06/22/04 WBA.


HAROLD PYON
SUPERVISORY PATENT EXAMINER

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6/23/04